

AMENDMENTS TO THE CLAIMS

Claims 1-16 (Canceled)

17. (New) A robot controller comprising:

 a motion control means for performing a calculation process for achieving motion control of an object to be controlled;

 a recognition and planning means for performing task and motion planning of the object to be controlled and recognition of outside world;

 an input/output interface for outputting a command to the object to be controlled and receiving as input, a state of the object to be controlled; and

 a route selecting means for controlling communications by switching connections among the motion control means, the recognition and planning means, and the input/output interface by means of a switch that has a plurality of external input/output ports and switches among digital signal paths respectively connected to the motion control means, the recognition and planning means, and the input/output interface, wherein

 motions of a robot of the object to be controlled are controlled on a basis of results of the task and motion planning of the object to be controlled and the recognition of the outside world while controlling the communications by switching the connections among the motion control means, the recognition and planning means, and the input/output interface by the route selecting means.

18. (New) A robot controller comprising:

 motion control means for performing a calculation process for achieving motion control of an object to be controlled;

 recognition and planning means for performing task and motion planning of the object to be controlled and recognition of outside world;

 an input/output interface for outputting a command to the object to be controlled and receiving as input, a state of the object to be controlled;

a first route selecting means connected to the recognition and planning means by means of a switch that has a plurality of external input/output ports and switches a digital signal path connected to the recognition and planning means to one of the ports; and

a second route selecting means connected to the motion control means, the first route selecting means, and the input/output interface by means of a switch that has a plurality of external input/output ports and switches among digital signal paths connected to the motion control means, the recognition and planning means, and the input/output interface, wherein

motions of a robot of the object to be controlled is controlled on a basis of results of the task and motion planning of the object to be controlled and the recognition of the outside world while controlling communications by switching connections between the second route selecting means and the recognition and planning means by the first route selecting means and while controlling communications by switching connections between the recognition and planning means, the first route selecting means, and the input/output interface by the second route selecting means.

19. (New) The robot controller as claimed in claim 17, wherein the route selecting means has a function to control an order of priority of data transfer, and the route selecting means controls communications by switching the connections among the motion control means, the recognition and planning means, and the input/output interface on a basis of the order of priority of data transfer.

20. (New) The robot controller as claimed in claim 19, wherein the route selecting means controls the order of priority of data transfer according to a control situation of the object to be controlled, and the route selecting means controls communications by switching the connections among the motion control means, the recognition and planning means, and the input/output interface on a basis of the order of priority of data transfer according to the control situation of the object to be controlled.

21. (New) The robot controller as claimed in claim 19, wherein the route selecting means controls the order of priority of data transfer according to a priority order data embedded in transfer data.

22. (New) The robot controller as claimed in claim 19, wherein the route selecting means operates to temporarily stop transfer of non-preferential data when controlling the order of priority of data transfer.

23. (New) The robot controller as claimed in claim 19, wherein the route selecting means operates to thin out non-preferential data when controlling the order of priority of the data transfer.

24. (New) The robot controller as claimed in claim 17, wherein the route selecting means has a function to control an occupation ratio of a data transfer capacity, and the route selecting means controls communications by switching the connections among the motion control means, the recognition and planning means, and the input/output interface on a basis of the occupation ratio of the data transfer capacity.

25. (New) The robot controller as claimed in claim 24, wherein the route selecting means controls the occupation ratio of the data transfer capacity according to the control situation of the object to be controlled, and the route selecting means controls communications by switching the connections among the motion control means, the recognition and planning means, and the input/output interface on a basis of the occupation ratio of the data transfer capacity according to the control situation of the object to be controlled.

26. (New) The robot controller as claimed in claim 24, wherein the route selecting means controls the occupation ratio of the data transfer capacity on a basis of occupation ratio data embedded in transfer data.

27. (New) The robot controller as claimed in claim 17, wherein the route selecting means has a function to control a clock rate of data transfer, and the route selecting means controls communications by switching the connections among the motion control means, the recognition and planning means, and the input/output interface by changing the clock rate of the data transfer according to a control situation of the object to be controlled.

28. (New) The robot controller as claimed in claim 20, wherein the control situation of the object to be controlled is a control error.

29. (New) The robot controller as claimed in claim 20, wherein the control situation of the object to be controlled is a control desired position.

30. (New) The robot controller as claimed in claim 20, wherein the route selecting means has an exclusive signal line for making notification of a data transfer request.

31. (New) The robot controller as claimed in claim 17, wherein
the route selecting means has a storage means to provide time buffering between the motion control means and the recognition and planning means, and
the route selecting means controls communications by switching the connections among the motion control means, the recognition and planning means, and the input/output interface.

32. (New) The robot controller as claimed in claim 25, wherein the route selecting means operates so as to put a non-preferential data aside and stored in the storage means when controlling an order of priority of data transfer.